

Unit 2 – Chemical Reactions Test (Chapters 4, 5, & 6)

Part I: Multiple Choice

- What is another name for a negative ion?
 - valence electron
 - ionic compound
 - anion
 - cation
 - stable octet
- Which of the following is an ionic compound?
 - $\text{C}_6\text{H}_{12}\text{O}_6$
 - MgCl_2
 - CO
 - N_2O_5
 - SO_2
- What is the correct chemical formula for Calcium Nitrate?
 - CaN
 - Ca_2N
 - Ca_2N_3
 - Ca_3N_2
 - $\text{Ca}(\text{NO}_3)_2$
- What is the name of the compound PbS_2 ?
 - Lead (II) Sulfide
 - Lead (IV) Sulfide
 - Lead Sulfide
 - Lead Sulfide
 - Lead Sulfide
- What is the correct formula for the compound aluminium carbonate?
 - $\text{Al}(\text{CO}_3)$
 - $\text{Al}(\text{CO}_3)_2$
 - $\text{Al}(\text{CO}_3)_3$
 - $\text{Al}_2(\text{CO}_3)_3$
 - $\text{Al}_3(\text{CO}_3)_2$
- What is the correct formula for Ammonium Sulfide?
 - NH_4SO_3
 - $(\text{NH}_4)_2\text{S}$
 - $(\text{NH}_4)_2\text{SO}_4$
 - $(\text{NH}_4)_2\text{SO}_4$
 - NH_4S
- What is the correct name for the acid HI ?
 - Iodic Acid
 - Hydrogen Iodine Acid
 - Hydroiodic Acid
 - Hydroxide Acid
 - None of the above
- What is the chemical formula for Sulfuric Acid?
 - HSO_4
 - H_2SO_4
 - H_2S
 - SO_4H
 - H_2SO_3
- What is the name for IBr ?
 - Iodine Dibromide
 - Triiodine Tribromide
 - Iodine Monobromide
 - Diodine Bromide
 - Iodine Tribromide
- Which best describes the pH of acids?
 - Higher than 0
 - Lower than 0
 - Approximately 0
 - Lower than 7
 - Higher than 7
- Which of the following combinations would give a neutralization reaction?
 - $\text{LiOH} + \text{Ca}(\text{NO}_3)_2$
 - $\text{H}_3\text{PO}_4 + \text{CH}_4$
 - $\text{SnI}_6 + \text{BeF}_2$
 - $\text{Cu} + \text{AlF}_3$
 - $\text{HI} + \text{KOH}$
- Which of the following contributes to making acid rain?
 - N_2
 - NH_3
 - HBr
 - SO_3
 - $\text{Ca}(\text{OH})_2$

Part II: Short Answer

1. Write the name of each of the following compounds: (4A)

a. K_2O (ionic)

b. FeBr_2 (Ionic)

c. Cl_2O_6 (Covalent/Molecular)

d. $\text{Sc}(\text{NO}_3)_3$ (Ionic)

2. What ions are formed when these acids and bases are dissolved in water (include charge)? (2 K/U)

a. HBr

b. $\text{Ca}(\text{OH})_2$

3. Describe the error in each of the following chemical formulas: (2K/U, 2C)

a. Copper (II) Chloride, Cu_2Cl

b. Lithium Sulfate, Li_2S

4. Label each chemical reaction as synthesis, decomposition, combustion, single displacement, or double displacement:
(5 K/U)





5. Balance each of the following chemical reactions: (3A)

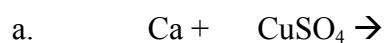


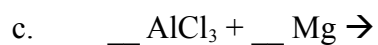
6. Write a complete and balanced chemical reaction for each of the following: (4K/U, 2A)

a) Solid copper reacts with oxygen gas (O_2) to produce solid copper (II) oxide

b) Solid zinc metal reacts with aqueous hydrogen chloride to produce hydrogen gas (H_2) and aqueous zinc chloride

7. Predict the products, write the proper chemical formula for each product, and balance the equation for the following. (3T/I, 3A)





8. You have heartburn, which is when HCl from your stomach begins to burn your esophagus. You have two things in your medicine cabinet: Ca(OH)_2 or H_2CO_3 . Which should you take? Write a complete chemical reaction for the neutralization of the acid. (2 K/U, 2C)

9. Write the chemical formula (balanced) for each compound. (4A)

a. Cesium Chloride (ionic)

b. Sodium Carbonate (ionic)

c. Carbon tetrafluoride (covalent/molecular)

d. Dihydrogen Disulfide (covalent/molecular)